

## Appendix H

USFWS



*Biological staff conduct a variety of surveys each year.*

## Intra-Service Section 7 Biological Evaluation Form

## INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

**Originating Person:**

Beth Goldstein, Refuge Planner  
U.S. Fish and Wildlife Service  
300 Westgate Center Drive  
Hadley, MA 01035

**Telephone Number:** (413) 584-2634

**Date:** May 27, 2008

- I. Region:** R5
- II. Service Activity (Program):** Service-preferred Alternative B from the Wallkill River National Wildlife Refuge draft Comprehensive Conservation Plan and Environmental Assessment (draft CCP/EA)
- III. Pertinent Species and Habitat:**
- A. Listed species and/or their critical habitat within the action area:**
- Bog Turtle (*Clemmys [Glyptemys] muhlenbergii*)  
Indiana Bat (*Myotis sodalis*)  
Dwarf Wedgemussel (*Alasmodonta heterodon*)  
Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*)  
Small-whorled Pogonia (*Isotria medeoloides*)
- B. Proposed species and/or proposed critical habitat within the action area:**
- None
- C. Candidate species within the action area:**
- None
- D. Include species/habitat occurrences on a map.**
- The New Jersey Field Office has these maps.
- IV. Geographic area or station name and action:** Wallkill River National Wildlife Refuge, Sussex, New Jersey
- V. Location:** See attached map H-1
- A. Ecoregion Number and Name:** 37/Hudson River/New York Bight
- B. County and State:** Sussex County, New Jersey and Orange County, New York
- C. Section, township, and range (or latitude and longitude):** Vernon, Wantage, Hardyston and Frankford Townships in New Jersey and towns of Warwick and Minisink in New York
- D. Distance (miles) and direction to nearest town:** 3 miles east of Sussex Borough

**E. Species/habitat occurrence:**

A variety of habitats, including red maple swamps, calcareous fens, wet meadows, old fields, and oak-beech forests are found throughout the refuge. The refuge's acquisition boundary encompasses 7,500 acres and follows roughly 9 miles of the Wallkill River from New Jersey Route 23 north to just above the New Jersey-New York State Line. As of January 2006, the Service had purchased approximately 5,000 acres within the approved acquisition boundary.

When acquisition is complete, the refuge will protect approximately 4,200 acres of freshwater wetlands and 3,300 acres of adjacent upland. Wetland habitat types include 1,600 acres of palustrine forest, 1,500 acres of emergent marsh, 600 acres of wet meadow, 400 acres of scrub-shrub marsh, and 100 acres of open water. Upland habitat types include 2,500 acres of agricultural land and 800 acres of mixed hardwood forest. Grasslands are the refuge's dominant upland habitat type with approximately 1,800 acres in grassland and old field.

A total of 225 species of birds occur on the refuge, including 19 species of waterfowl, 35 species of waterbirds, 24 species of raptors, and 125 species of songbirds. The Wallkill River bottomland is one of the few, large areas of high quality waterfowl habitat remaining in northwestern New Jersey.

The refuge's population of mammals is diverse. It includes bats, beavers, muskrats, river otters, minks, red foxes, gray foxes, coyotes, white-tailed deer, and black bears. The Wallkill River valley provides some of the best remaining habitat for amphibians and reptiles in the Northeast. The Wallkill River itself provides an excellent warm-water fishery.

**VI. Description of proposed action**

The draft CCP/EA evaluates three alternative scenarios for managing the refuge over the next 15 years. The CCP Planning Team and the NWRS Senior Leadership Team have identified alternative B as the Service-preferred alternative. One of the biological priorities in the CCP is to restore forested and non-forested wetlands by allowing the riparian corridor along the Wallkill River to reforest and by plugging ditches. The refuge would also give priority to managing early successional and grassland habitat.

Alternative B proposes to add a total of 9,550 acres to the existing, approved refuge boundary. This acreage includes the Papakating Creek Focus Area which encompasses a major tributary to the Wallkill River; and includes significant wetlands associated with bog turtle habitat. Other important habitats in the proposed expansion area include forested and emergent wetlands, large grassland complexes, upland forests, floodplain forests, and farmlands that are regionally important for migratory waterbirds, waterfowl, raptors, grassland birds, and rare reptiles. Rare calcareous wetlands are also present in some of the areas proposed for inclusion in the current boundary.

Below are specific descriptions of the listed species that could potentially be affected by alternative B of this draft CCP/EA. Page numbers are provided to direct the reviewer to the appropriate sections in the draft CCP/EA that discuss actions that could potentially affect these species. We are seeking informal consultation on alternative B.

**Bog Turtle (*Glyptemys [Glyptemys] muhlenbergii*)**

The bog turtle is the only federal-listed species known to be present on the Wallkill River refuge. One active site is on Service-owned land, one active site is on private land in the original acquisition boundary, and an estimated 10 sites suitable for supporting the turtle lie within the current acquisition boundary: some on Service-owned land and some on inholdings. Between 2002 and 2006, the refuge biologist surveyed the one known bog turtle site as well as numerous potential sites within the acquisition boundary. Four turtles found at one site were marked with radio transmitters. The use of radio telemetry aided in monitoring population trends, detecting signs of recruitment and reproduction, tracking seasonal movements and determining home range.

In 2005 and 2007, Dr. Kurt Buhlmann of the University of Georgia surveyed 15 potential bog turtle sites within the refuge acquisition boundary. No turtles, other than the four at the one known site, were found on any of those sites. Additional turtles were located within the refuge acquisition boundary, but not on refuge-owned land. After analyzing his data from 2005 and 2007, Dr. Buhlmann will provide the refuge with a freshwater turtle management plan. In addition, he will work with the refuge to further analyze bog turtle habitats within its boundaries, and on possible reintroductions of the bog turtle.

One of the greatest threats to bog turtles is the loss of long-lived, wild, adult animals to a lucrative, illegal wildlife trade (USFWS 2001). Another serious threat is the continued loss, alteration or fragmentation of the highly specialized species' wetland habitat.

The overall objective in the recovery plan is to protect and maintain existing populations of this species and its habitat, enabling its eventual removal from the federal list of endangered and threatened wildlife and plants (USFWS 2001). The plan identifies five bog turtle recovery units and their subunits. The refuge lies in the Hudson River/Housatonic Unit, Wallkill River Watershed Subunit. Strategies in the draft CCP/EA follow the recovery plan's recommendations of tasks that, eventually, will lead to the delisting of this species. Those recommendations include the following strategies found on pp. 3-16 through 3-17 of the draft CCP/EA that are already being implemented on the refuge.

- Work with the New Jersey and New York FWS Field Offices and with the states of New Jersey and New York to adequately screen projects/permits that may affect bog turtles and their habitats on and near the refuge, and to improve the effectiveness of regulatory reviews in protecting bog turtles and their habitats, specifically to address agencies working at cross purposes when permitting activities in wetlands.
- Conduct surveys of known, historical and potential bog turtle habitat.
- Monitor the status of and threats to populations and habitat, including changes in hydrology, encroachment of development, successional changes, and the introduction and spread of invasive native and exotic plants. Monitor population trends, signs of recruitment and reproduction, seasonal movements, and home range using methods such as radio telemetry, trapping and foot searches.
- Continue efforts to acquire the one known bog turtle site on private lands within the current refuge boundary.
- Deter the poaching of bog turtles by conducting routine and random site visits.
- Control invasive plants and set back succession by using biological control agents, girdling red maple stems, grazing goats or other livestock, and mowing or mulching.
- Allow beaver ponds to progress through natural stages of succession to provide potential bog turtle habitat, where beaver populations do not conflict with private landowners or public roads.

The additional strategies proposed in alternative B can be found on page 3-40 of the draft CCP/EA, and include the following.

- Develop a site management and monitoring plan for occupied sites on Service-owned lands.
- Use surveys to effectively monitor the status of bog turtles at known sites.
- Re-evaluate the presence of turtles at historical locations.
- Locate additional sites for conservation and recovery within the proposed expanded boundary.

#### Indiana Bat (*Myotis sodalis*)

The refuge first conducted mist net surveys for Indiana bats in August 2008. Surveyors found three Indiana bats, including one post-lactating female and one juvenile, which indicates the presence of a

maternity colony nearby. The refuge had previously suspected the presence of Indiana bats, in part because they have been documented in several nearby locations. A maternity colony was found in the summer of 2007 in Wantage, about 2.25 to 4 miles from refuge lands; and since the mid-1990's, Indiana bats have been known to hibernate in three areas near Hibernia, N.J., about 20 miles south of the Wallkill River refuge. Also, the bats' summer focus area - where bats could potentially occur between April 1 and September 30 - includes the entire refuge. Furthermore, the refuge provides riparian, forested and upland habitat types typically used by Indiana bats in summer for roosting and foraging.

The strategies related to Indiana bats can be found on page 3-41 of the draft CCP/EA. They include working with the New Jersey Field Office to hire a private contractor to conduct mist net surveys for Indiana bats on Service-owned lands and in the expansion area. Since Indiana bats were found, the refuge plans to implement recovery tasks. We also propose to collaborate with Great Swamp refuge to recruit students to conduct research on Indiana bats on Service-owned lands. Students could study the various life cycles of the bats, such as when and where they forage, hibernate and roost.

Dwarf wedgemussel (*Alasmidonta heterodon*)

The Wallkill River refuge includes potential habitat for the dwarf wedgemussel. Our New Jersey Field Office started surveys of the Wallkill River in August 2000, but found no mussels. Additional surveys are needed to fully determine their presence, absence, or the possibilities for their introduction. One of the mussel's host fish, the tessellated darter (*Etheostoma olmstedi*), was observed during the 2000 survey. The strategies that relate to the dwarf wedgemussel can be found on page 3-41 in the draft CCP/EA; they include the following: determine the feasibility of re-establishing populations of dwarf wedgemussel within that species' historic range and, if feasible, introduce it into those areas; and, collaborate with local colleges and universities to aid the refuge with research on dwarf wedgemussels.

Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*)

Mitchell's satyr butterfly was listed by the Service as an endangered species in 1992. The majority of the current and historic population sites are clustered in southern Michigan and adjacent northern Indiana, but some isolated populations historically were present in northern New Jersey. Two well-known sites within Sussex and Warren counties supported the species in the recent past. The refuge is located in Sussex County. Strategies related to Mitchell's Satyr butterfly can be found on page 3-41 and include surveying for the butterfly on Service-owned lands in appropriate habitats, such as calcareous fens.

Small-whorled pogonia (*Isotria medeoloides*)

The small-whorled pogonia is a sparse but widely distributed plant that is a member of the orchid family. The plant's primary range extended from southern Maine and New Hampshire through the Atlantic Seaboard states to northern Georgia and southern Tennessee (USFWS 1992). The plant was listed as endangered in 1982 and then reclassified as threatened in 1994. The plant grows in upland sites in mixed-deciduous or mixed deciduous coniferous forests that are generally in second- or third-growth successional stages (USFWS 1992). Two extant sites of the plant are confirmed in New Jersey, and both are in Sussex County, where the refuge is located.

**VII. Determination of effects:**

**A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C (attach additional pages as needed):**

Bog Turtles

In alternative B we protect bog turtle sites by owning them and managing them for high-quality bog turtle habitat. We also propose to expand the refuge boundary by 9,550 acres, creating the potential to protect at least 10 more bog turtles sites within the Papakating Creek area.

We predict no adverse impacts on bog turtles from implementing alternative B for the following reasons.

- When conducting habitat management techniques, such as girdling red maple stems and grazing, we would adhere to biological opinion.
- The biological agents we would use to control invasive plants in bog turtle habitat would be species-specific and therefore would affect only the targeted, unwanted vegetation. They would have no affect on desired plant species at bog turtle sites, such as tussock sedge.
- The foot traffic of refuge staff monitoring bog turtles and their habitat and managing vegetation would not cause adverse effects at those sites because we would keep foot traffic and equipment hauling to a minimum to protect the seep vegetation. We would not drive vehicles, ORVs, or heavy equipment on turtle sites.
- Foot traffic from cross-country skiers, snowshoers and hunters would likely not adversely affect bog turtles because the turtles generally hibernate from late September through April, when most of the skiing, showshoeing and hunting seasons occur.

Indiana bat, Dwarf wedgemussel, Mitchell's satyr butterfly and Small-whorled pogonia

Although we do not know whether any of these species live on the refuge, the actions proposed in alternative B would only enhance habitats used by these species.

Habitat management actions proposed in alternative B of the draft CCP/EA will complement the habitat needs of Indiana bats by increasing forested habitats, particularly along the riparian corridor that buffers the Wallkill River.

Strategies to work with partners to improve water quality would benefit the dwarf wedgemussel, as would the proposal to expand the refuge to include the Papakating Creek, which contains potential habitat for this species. We would undertake individual consultation for reintroduction or surveys of dwarf wedgemussel.

Strategies to manage and protect bog turtle habitat would also benefit the Mitchell's satyr butterfly, since these two species use similar habitat types.

Increasing core patches of upland mixed forested habitat would benefit the small-whorled pogonia, which uses this habitat type.

We predict no adverse impacts on any of these species from implementing alternative B because, to our knowledge, these species are not present on the refuge. Also, our general refuge management would continue to maintain habitat components important to major portions of the species' life cycles.

In addition, we predict no adverse impacts to any of the above species from mosquito control on the refuge. The refuge conducted an Intra-Service Section 7 Biological Evaluation in 2006 that found mosquito control to have no adverse effect on bog turtle populations. Because the special use permit with the Sussex County Office of Mosquito Control does not allow the use of insecticides (adulticides) to control adult mosquitoes on the refuge, there would also be no effects on the Mitchell's satyr butterfly or the adult stages of the insect prey base of any Indiana bats that might forage on the refuge in the future. When it is necessary to conduct mosquito control on the refuge, the Service will coordinate with the Sussex County Office of Mosquito Control to ensure that we take all measures to minimize the potential harm to those species, if present.

**B. Explanation of actions to be implemented to reduce adverse effects: N/A**



**VIII. Effect determination and response requested: [\* = optional]**

**A. Listed species/designated critical habitat:**

**Determination**

**Response requested**

no effect/no adverse modification  
[species: Mitchell's Satyr Butterfly  
(*Neonympha mitchellii mitchellii*), Small-  
whorled pogonia (*Isotria medeoloides*) and  
dwarf wedgemussel (*Alasmodonta heterodon*)]

\_\_\_\_ \*Concurrence

may affect, but is not likely to adversely  
affect species/adversely modify critical habitat  
[species: Bog Turtle (*Clemmys [Glyptemys]  
muhlenbergii*) and Indiana Bat (*Myotis sodalis*)]

~~\_\_\_\_~~ Concurrence

may affect, and is likely to adversely  
affect species/adversely modify critical habitat  
(species: \_\_\_\_\_)

\_\_\_\_ Formal Consultation

**B. Proposed species/proposed critical habitat:**

**Determination**

**Response requested**

no effect on proposed species/no adverse  
modification of proposed critical habitat

(species: \_\_\_\_\_)  
\_\_\_\_ \*Concurrence

is likely to jeopardize proposed species/  
adversely modify proposed critical habitat

(species: \_\_\_\_\_)  
\_\_\_\_ Conference

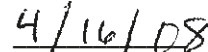
**C. Candidate species:****Determination****Response requested**no effect  
(species: \_\_\_\_\_)

\_\_\_\_ \*Concurrence

is likely to jeopardize candidate species  
(species: \_\_\_\_\_)

\_\_\_\_ Conference

  
 Project Biologist (Requestor)

  
 Date
**IX. Reviewing ESFO Evaluation:**A. Concurrence X Nonconcurrence \_\_\_\_\_


B. Formal consultation required \_\_\_\_\_

C. Conference required \_\_\_\_\_

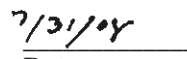
D. Informal conference required \_\_\_\_\_

E. Remarks (attach additional pages as needed):

  
 Endangered Species Biologist (Reviewer),  
 New Jersey Field Office

  
 Date

  
 Assistant Supervisor, New Jersey Field Office

  
 Date
**Literature Cited**

U.S. Fish and Wildlife Service. 1992. Small-whorled Pogonia (*Isotria medeoloides*) Recovery Plan, First Revision. Newton Corner, Massachusetts. 75 pp.

U. S. Fish and Wildlife Service. 2001. Bog turtle (*Clemmys muhlenbergii*), Northern Population, Recovery plan. Hadley, Massachusetts, 103 pp.



